

engineering data service

SYLVANIA 5933 807W

MECHANICAL DATA

Bulb	T-12
Base[1]	Low Loss Phenolic 5-Pin
Basing	5AW
Cathode	Unipotential
Mounting Position	Any

RATINGS

Shock (Intermittent Service-Abs. Max.)	450 g
Vibration (Continuous Service-Design Center)	2.5 g
Mechanical Resonance	None Below 100 cps

ELECTRICAL DATA

HEATER CHARACTERISTICS

Heater Voltage	6.3 Volts
Heater Current (Avg.)	900 Ma
Heater Current (Max.)[2]	990 Ma
Heater Current (Min.)[2]	810 Ma

DIRECT INTERELECTRODE CAPACITANCES

	Min.[2]	Avg.	Max.[2]
Control Grid to Plate (Shielded)			0.2 μμf
Input (Unshielded)	10	12	14 μμf
Output (Unshielded)	5.3	7	8.7 μμf

RATINGS (Design Center Values)

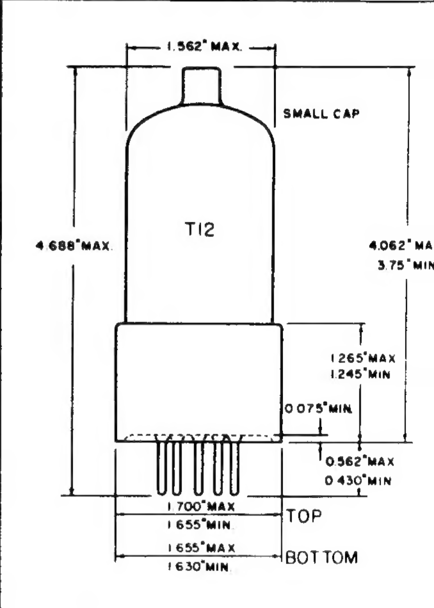
Plate Voltage (Class B, RF or AF)	600 Volts Max.
Plate Voltage (Class C, CW)	600 Volts Max.
Plate Voltage (Class C, Phone[3])	475 Volts Max.
Screen Voltage	300 Volts Max.
Control Grid Voltage (Class C)	-200 Volts Max.
Plate Dissipation (Class B, RF or AF)	25 Watts Max.
Plate Dissipation (Class C, CW)	25 Watts Max.
Plate Dissipation (Class C, Phone[3])	16.5 Watts Max.
Screen Dissipation (Class B, AF)	3.5 Watts Max.
Screen Dissipation (Class B, RF)	2.5 Watts Max.
Screen Dissipation (Class C, CW)	3.5 Watts Max.
Screen Dissipation (Class C, Phone[3])	2.5 Watts Max.
Plate Input (Class B, AF)	60 Watts Max.
Plate Input (Class B, RF)	37.5 Watts Max.
Plate Input (Class C, CW)	60 Watts Max.
Plate Input (Class C, Phone[3])	40 Watts Max.
Heater-Cathode Voltage	135 Volts Max.
Frequency for 100% Rating	60 Mc Max.
Frequency for 75% Rating (Class B, Class C Grid or Suppressor Modulated)	125 Mc Max.
Frequency for 55% Rating (Class C, or Plate Modulated)	125 Mc Max.

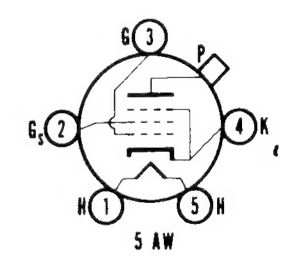
CHARACTERISTICS

	Min.[2]	Avg.	Max.[2]	
Plate Voltage	—	600	—	Volts
Screen Voltage	—	300	—	Volts
Control Grid Voltage	—	-29	—	Volts
Plate Current	24	36	48	Ma
Screen Current	—	—	4	Ma
Plate Current for E_c = -100 Volts	—	—	0.5	Ma
Power Output at 15 mc with Screen Volts = 200, I_b = 100 ma, I_c = 5 to 7 ma, R_L = 10,000 Ohms	33	—	—	Watts

QUICK REFERENCE DATA

Rugged beam amplifier tube designed for use in mobile transmitters or amplifiers which may be subjected to shock or vibration.





SYLVANIA ELECTRIC PRODUCTS INC.

Prepared and Released By The TECHNICAL PUBLICATIONS SECTION EMPORIUM, PENNSYLVANIA

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TYPICAL OPERATION

Audio Amplifier or Modulator (Class AB_2) — Two Tubes

	CCS[4]			ICAS[5]	
Plate Voltage	400	500	600	750	Volts
Screen Grid Voltage[6]	300	300	300	300	Volts
Control Grid Voltage	–25	–29	–30	–32	Volts
Peak Grid to Grid Signal Voltage	78	86	78	92	Volts
Plate Current (Zero Signal)	90	72	60	52	Ma
Plate Current (Maximum Signal)	240	240	200	240	Ma
Screen Current (Zero Signal)	5	5	5	5	Ma
Screen Current (Maximum Signal)	10	10	10	10	Ma
Load Resistance (Plate to Plate)	3200	4240	6400	6950	Ohms
Driving Power (Maximum Signal) (approx.)[7]	0.2	0.2	0.1	0.2	Watt
Power Output (approx.)[8]	55	75	80	120	Watts

RF Power Amplifier (Class B Telephony)
Single Tube — 100% Modulation of Driver Stage

Plate Voltage	400	500	600	750	Volts
Screen Grid Voltage	250	250	250	300	Volts
Control Grid Voltage[9]	–25	–25	–25	–35	Volts
Peak Signal Voltage	30	30	20	27	Volts
Plate Current	75	75	62.5	60	Ma
Screen Current	4	4	3	3	Ma
Control Grid Current (approx.)	0	0	0	0	Ma
Driving Power (approx.)	0.25	0.25	0.2	0.12	Watt
Power Output (approx.)	9	12.5	12.5	15	Watts

RF Power Amplifier (Class C Telephony)
Single Tube — 100% Plate Modulation

Plate Voltage	325	400	475	600	Volts
Screen Grid Voltage[10]	225	225	225	275	Volts
Screen Dropping Resistor	20000	30000	50000	50000	Ohms
Control Grid Voltage[11]	–75	–80	–85	–90	Volts
Grid Leak Resistor	25000	22800	21300	22500	Ohms
Peak Signal Voltage	90	95	110	115	Volts
Plate Current	80	80	83	100	Ma
Screen Current	5	5.75	5	6.5	Ma
Grid Current (approx.)	3	3.5	4	4	Ma
Driving Power (approx.)	0.25	0.3	0.4	0.4	Watt
Power Output (approx.)	17.5	22.5	27.5	42.5	Watts

RF Power Amplifier or Oscillator (Class C Telegraphy)
Single Tube Key Down Unmodulated Condition

Plate Voltage	400	500	600	750	Volts
Screen Grid Voltage[12]	250	250	250	250	Volts
Screen Dropping Resistor	20000	42000	50000	85000	Ohms
Control Grid Voltage[13]	–45	–45	–45	–45	Volts
Peak Signal Voltage	65	65	65	65	Volts
Plate Current	100	100	100	100	Ma
Screen Current	7.5	6.0	7.0	6.0	Ma
Grid Current (approx.)	3.5	3.5	3.5	3.5	Ma
Driving Power (approx.)	0.2	0.2	0.2	0.2	Watt
Power Output (approx.)	25	30	40	50	Watts

NOTES:

1. *Base dielectric loss factor is 0.1 maximum. Reference: ASTM Designation D-150-47T.*
2. *Extreme values which may be expected in production.*
3. *With plate modulation.*
4. *Continuous commercial service.*
5. *Intermittent commercial and amateur service.*
6. *May be obtained from a separate, well-regulated source or from the plate supply voltage if a voltage divider is used.*
7. *The effective grid circuit resistance should not exceed 500 ohms per grid, or the impedance 700 ohms.*
8. *Distortion in practical circuits should not exceed 5%, 5% and 3%, respectively, under CCS conditions.*
9. *The total effective grid circuit resistance should not exceed 25,000 ohms. May be obtained by either fixed bias or bypassed cathode resistor.*
10. *Generally obtained from the modulated plate supply through the specified resistor but a separate source properly modulated may be used.*
11. *Bias may be provided by any method. When grid leak bias is used the grid circuit resistance should not exceed the specified value.*
12. *May be obtained from the plate voltage supply through the specified dropping resistor or a separate supply may be provided.*
13. *Bias may be provided by use of 12,800 ohm grid leak, 410 ohm cathode resistor, fixed separate source, or combination of these. The grid circuit resistance should not exceed 25,000 ohms.*

CIRCUIT APPLICATION

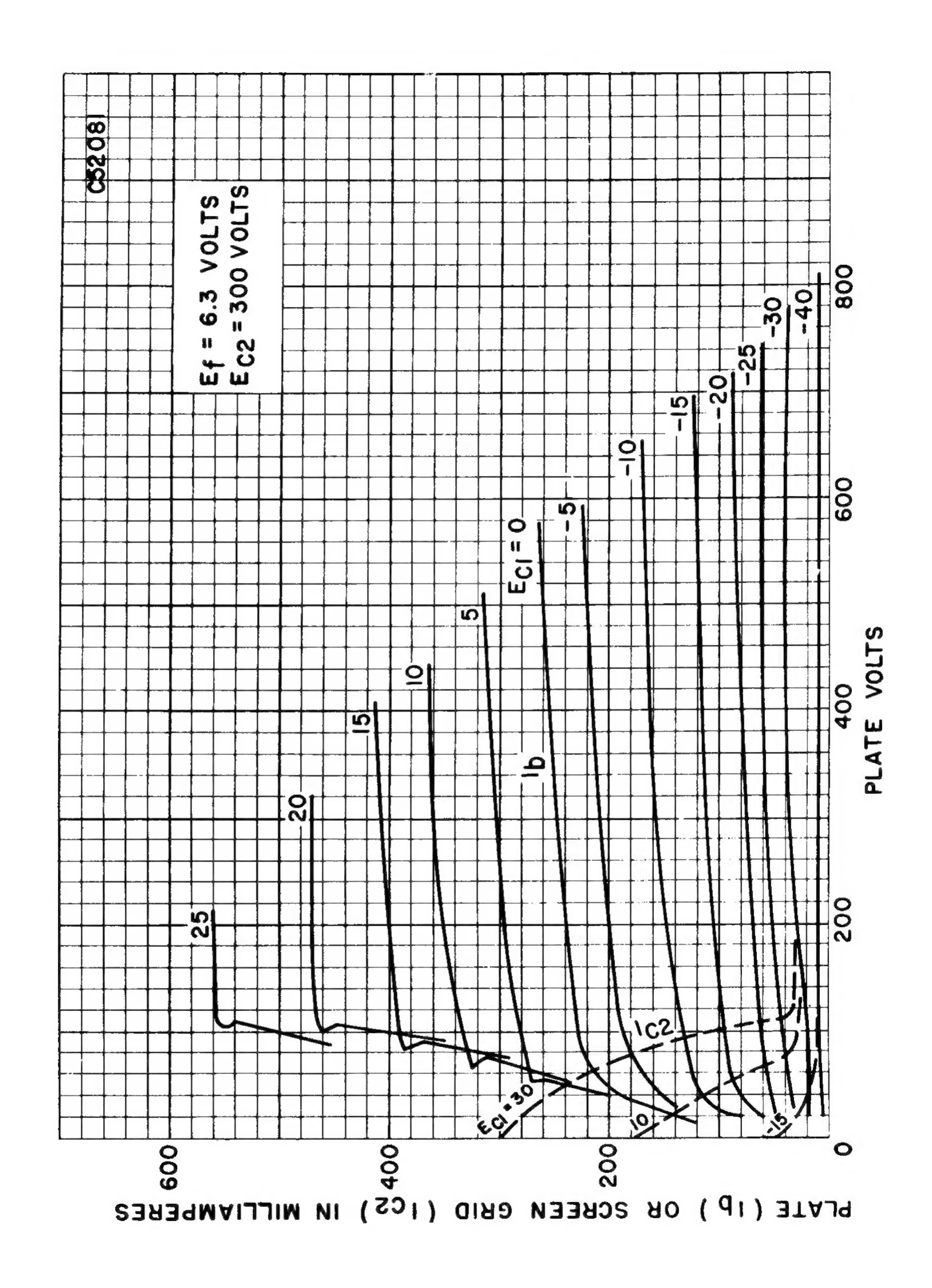
This type was primarily designed to make available the good characteristics of the Type 807 in a mechanical structure that could stand up under rough service. If it is desired to use this type for replacement in existing equipment, the effect of the different base diameter and bulb size (shown on the outline drawing) will require consideration.

SYLVANIA

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807W

AVERAGE PLATE CHARACTERISTICS



AVERAGE PLATE CHARACTERISTICS

